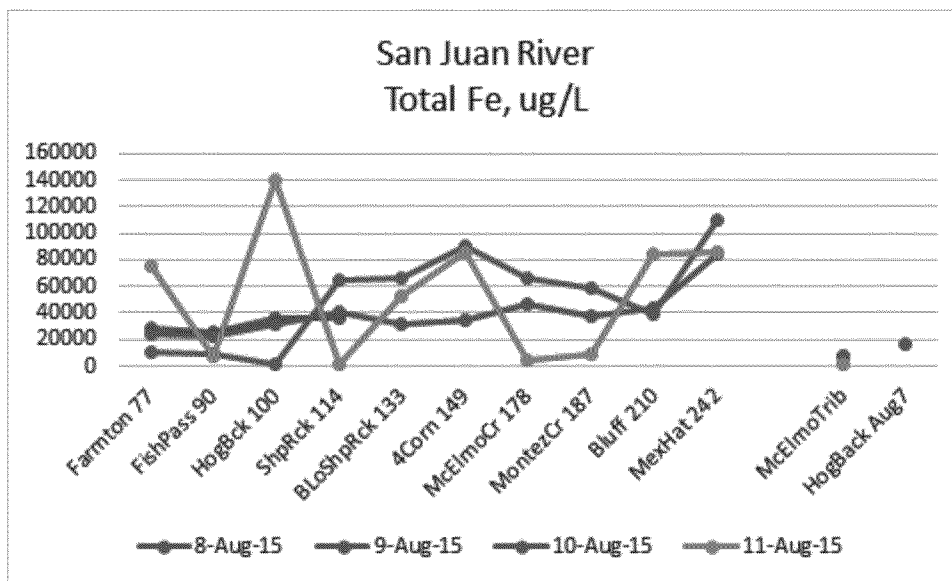
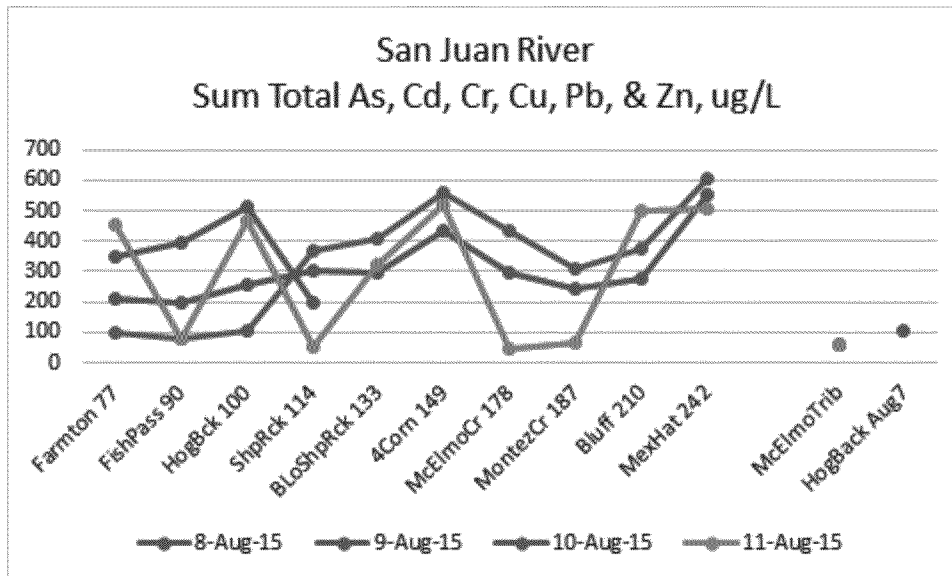


**To:** Allen, HarryL[Allen.HarryL@epa.gov]; Hiatt, Gerald[Hiatt.Gerald@epa.gov]; Calanog, Steve[Calanog.Steve@epa.gov]; Moxley, Bret[Moxley.Bret@epa.gov]; Johnson, AudreyL[Johnson.AudreyL@epa.gov]; Nattis, Randy[Nattis.Randy@epa.gov]; Tenley, Clancy[Tenley.Clancy@epa.gov]  
**Cc:** Montgomery, Michael[Montgomery.Michael@epa.gov]  
**From:** Black, Ned  
**Sent:** Fri 8/14/2015 7:49:24 PM  
**Subject:** San Juan River metals figures

Both are from unfiltered, i.e., total metals samples. Sample location names abbreviated on axis with river miles from Durango.

What we're seeing apparently is multiple pulses.





ned black, ph.d.

us epa r9

regional cercla ecologist

415-972-3055

Please be advised I currently have limited access to email when I am not in the office (e.g., on travel), therefore please be patient with any communication delays.

**From:** Black, Ned

**Sent:** Friday, August 14, 2015 11:10 AM

**To:** Allen, HarryL; Hiatt, Gerald; Calanog, Steve; Moxley, Bret; Johnson, AudreyL; Nattis, Randy

**Cc:** Montgomery, Michael

**Subject:** RE: Data Queries, HUC 14080101 and 14080201, San Juan Watershed

I will send figure(s) to y'all by 12:30. I'm WAH, as is Gerry, but we can both be reached by phone for a call at 12:30 or 1.

Mike Montgummy, I got your suggestions for changes to my river/metals figure.

# Personal Matters/Ex. 6

Cheers,

ned

ned black, ph.d.

us epa r9

regional cercla ecologist

415-972-3055

Please be advised I currently have limited access to email when I am not in the office (e.g., on travel), therefore please be patient with any communication delays.

**From:** Allen, HarryL

**Sent:** Friday, August 14, 2015 11:03 AM

**To:** Black, Ned; Hiatt, Gerald; Calanog, Steve; Moxley, Bret; Johnson, AudreyL

**Subject:** Fwd: Data Queries, HUC 14080101 and 14080201, San Juan Watershed

Hey guys

Jared has asked us to pull together and share w him all the data so far and some historical data.

Let's talk internally in the EOC at 1230 or 1.

I asked Water to get the stuff attached. Steve and Bret will attempt to get us full access to Gold King data - all regions but especially the stuff we collected.

I need to present all SW data in one place, perhaps in a Ned graphical display, by 4 today.

Also, to include historical perspective Audrey Johnson provided historic data. Take a look at this and let's discuss.

ICP/AC: make sure we have it all. Bret you are not crucial to the internal chat but we need all SW and sed data.

Sent from my iPhone

Begin forwarded message:

**From:** "Johnson, AudreyL" <[Johnson.AudreyL@epa.gov](mailto:Johnson.AudreyL@epa.gov)>  
**Date:** August 14, 2015 at 10:49:17 AM PDT  
**To:** "Allen, HarryL" <[Allen.HarryL@epa.gov](mailto:Allen.HarryL@epa.gov)>  
**Cc:** "Montgomery, Michael" <[Montgomery.Michael@epa.gov](mailto:Montgomery.Michael@epa.gov)>  
**Subject:** Data Queries, HUC 14080101 and 14080201, San Juan Watershed

Harry,

As requested, Surface Water data from USGS on San Juan River by HUCs. I can do more queries if needed. Let me know if you need more information.

**Audrey L. Johnson**

Life Scientist

US EPA, Region 9

Water Division, Tribal Water Section, WTR 3-4

75 Hawthorne Street

San Francisco, CA 94105

**Email:** [johnson.audreyL@epa.gov](mailto:johnson.audreyL@epa.gov)

**Phone:** (415) 972-3431

<http://www.epa.gov/region09/water/tribal/tribal-cwa.html#wtrpollution>

**From:** Allen, HarryL

**Sent:** Monday, August 10, 2015 10:46 PM

**To:** R9\_ER List; Ostrander, David; [acrotty@navajo-nsn.org](mailto:acrotty@navajo-nsn.org); [idelmar@navajo-nsn.org](mailto:idelmar@navajo-nsn.org); Yogi, David; Hubbard, Secody; Lee, Bessie; [hcleveland@navajo-nsn.org](mailto:hcleveland@navajo-nsn.org); Foster, Althea; Webster, Susan; Hayes, Mark; Sandoval, Joni; Pease, Amanda

**Cc:** [ebranch@nndoj.org](mailto:ebranch@nndoj.org); [bidtahnbecker@navajo-nsn.gov](mailto:bidtahnbecker@navajo-nsn.gov); [russellbegaye@gmail.com](mailto:russellbegaye@gmail.com); [jonmnez@yahoo.com](mailto:jonmnez@yahoo.com); [donbenn@navajo-nsn.gov](mailto:donbenn@navajo-nsn.gov); [tflora@nndoj.org](mailto:tflora@nndoj.org); [Personal Email/Ex. 6@nail.com](mailto:Personal Email/Ex. 6@nail.com); [rjoe.opvp@gmail.com](mailto:rjoe.opvp@gmail.com); [rbegay@nndoj.org](mailto:rbegay@nndoj.org); [dtaylor@nndoj.org](mailto:dtaylor@nndoj.org); [cbradley@nndoj.org](mailto:cbradley@nndoj.org); [smpollack@nndoj.org](mailto:smpollack@nndoj.org); [ronnieben@navajo-nsn.gov](mailto:ronnieben@navajo-nsn.gov); [nnepawq@frontiernet.net](mailto:nnepawq@frontiernet.net); [ybarney@navajopublicwater.org](mailto:ybarney@navajopublicwater.org); Johnson, AudreyL; Li, Corine; Montgomery, Michael; Cristiano, Gina; Farris, Laura; Lloyd, Lisa; Adams, Elizabeth; [leslee.bechtel@azdema.gov](mailto:leslee.bechtel@azdema.gov)

**Subject:** Gold King Mine Realease - Region 9 Update 4

Please be advised that Region 9 will send daily written updates to this notification list on EPA activities, highlighting new information each day. Also, Region 9 will host a daily Navajo Nation and Arizona coordination call at 4pm Navajo Time (3PM PDT/Arizona Time) - Please join us. The call in number is:

**Nonresponsive Conference Code**

### **Background**

On August 5, 2015, an EPA team working to investigate and address contamination at the Gold King Mine in San Juan County, Colorado, unexpectedly triggered a large release of mine waste water into the upper portions of Cement Creek. Initial estimates are that the release contained approximately three million gallons of water that was held behind unconsolidated debris near an abandoned mine portal. There were several workers at the site at the time of the breach, all were unharmed.

See attached for the current SITREP from Region 8 or see [http://www.epaossc.org/site/site\\_profile.aspx?site\\_id=11082](http://www.epaossc.org/site/site_profile.aspx?site_id=11082). Please request a password to view the geospatial viewer for an interactive map accessed through the webpage.

## **EPA Region 9 Activities**

The discharge has moved quickly and was last observed between Kirtland and Shiprock, NM. Navajo officials reacted days prior to the observed impact, assessing their well fields and drinking and irrigation water intake systems and issuing a precautionary "do not use" public service announcement regarding water from potentially impacted sources. On 8/8, the President of the Navajo Nation declared a State of Emergency for the San Juan River valley. Region 9 held a coordination meeting today with Navajo Nation EPA (NNEPA) and Navajo Department of Public Safety.

Region 9 has deployed an On Scene Coordinator (OSC) to the Durango Incident Command Post to coordinate Region 9 activities with an EPA Area Command in Region 8. The Region has also deployed a Public Information Officer (PIO) to participate in a Joint Information Center (JIC), presently in Durango, with and other the affected Federal, State, County and Tribal agencies.

Region 9 deployed an OSC to the Farmington Incident Command Post today to coordinate field activities and stakeholder requests for assistance. The ICP is co-located with EPA Incident Commanders from Region 6 (Dallas, TX office).

The Navajo EPA surface water monitoring program (Shiprock Office) collected water and sediment samples from the San Juan River - prior to the spill impact and have since established 8 fixed monitoring stations to be sampled daily. The stations stretch along the San Juan between Shiprock, NM and Mexican Hat, UT. Region 9 has provided 6 START contractors to coordinate and conduct increased sample collection and lab analysis in conjunction with NNEPA (a static map of the sampling locations "Overview" is attached).

Today START contractors tried to pinpoint the leading edge of the waste water discharge plume near Hogback, NM. Though not clearly visible as before, contractors conducted conductivity monitoring and collected samples from the area in an attempt to identify downstream impacts. Also, coordination calls today with Federal agencies, State of AZ, Coconino County and City of Page officials and congressional representatives suggested the need for sampling even further downstream in the Glen Canyon, Lake Powell and Coconino County segments of the San Juan River. EPA has begun to coordinate efforts with those of the Bureau of Reclamation and US Geological Survey to share information.

NNEPA also requested drinking water sampling support immediately for Navajo operated water intakes. A USEPA drinking water experts has deployed and is

working with NNEPA to inventory and assess water sources including private wells and intakes. USEPA will establish and provide a 1-800 telephone for private citizens and entities to request well water sampling.

Region 9 has hired a contractor to coordinate with Navajo Tribal Utilities Authority (NTUA) to deliver water to the areas impacted by the discharge. The Montezuma Creek well development area was closed as a precaution prior to any impact. EPA contractors are collecting NTUA provided water from the Sweetwater wellfield and delivering it to the Montezuma Creek service area.

Two Community Involvement Coordinators (CICs) arrived in Farmington Sunday. CICs met with Navajo Incident Command in Shiprock Sunday evening for an update on outreach activities to date. It was reported that by the end of 8/10, approximately 75% of Navajo communities along San Juan River had been reached by Navajo teams. Community Health Representatives from Navajo working to finish outreach to remaining communities. On 8/10, CICs attended two special chapter meetings arranged by Vice President Jonathan Nez and provided an update on EPA activity to date. At both chapter meetings, held at Aneth and Oljato, Vice President Nez participated, along with Attorney General Ethel Branch and local chapter officials. Present at the Oljato meeting were NNEPA Executive Director Dr. Donald Ben and special advisor to President Begaye Peterson Zah. The CICs will partner with various Navajo officials, Navajo incident command, and other responding agencies to ensure comprehensive outreach to all affected Navajo Chapters.

OSC Robert Wise (Durango):562-889-2572

CIC David Yogi (Farmington): 415-760-5419

PIO Rusty Harris-Bishop (Durango):415-694-8840

OSC Randy Nattis (Farmington): 415-940-1108

OSC Heister (to Farmington 8/11)

OSC Moxley (to Farmington 8/12)

OSC Calanog (to Durango 8/12)

Harry Allen, Section Chief (Sit Report):415-218-7406

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**From:** Allen, HarryL

**Sent:** Sunday, August 9, 2015 11:31 PM

**To:** R9\_ER List; Ostrander, David; [acrotty@navajo-nsn.org](mailto:acrotty@navajo-nsn.org); [jdelmar@navajo-nsn.org](mailto:jdelmar@navajo-nsn.org); Yogi, David; Hubbard, Secody; Lee, Bessie; [hcleveland@navajo-nsn.org](mailto:hcleveland@navajo-nsn.org); Foster, Althea; Webster, Susan; Hayes, Mark; Sandoval, Joni

**Cc:** [ebranch@nndoj.org](mailto:ebranch@nndoj.org); [bidtahnbecker@navajo-nsn.gov](mailto:bidtahnbecker@navajo-nsn.gov); [russellbegaye@gmail.com](mailto:russellbegaye@gmail.com); [jonmnez@yahoo.com](mailto:jonmnez@yahoo.com); [donbenn@navajo-nsn.gov](mailto:donbenn@navajo-nsn.gov); [tflora@nndoj.org](mailto:tflora@nndoj.org); [Personal Email/Ex. 6@gmail.com](mailto:Personal Email/Ex. 6@gmail.com); [rjoe.opvp@gmail.com](mailto:rjoe.opvp@gmail.com); [rbegay@nndoj.org](mailto:rbegay@nndoj.org); [dtaylor@nndoj.org](mailto:dtaylor@nndoj.org); [cbradrey@nndoj.org](mailto:cbradrey@nndoj.org); [smpollack@nndoj.org](mailto:smpollack@nndoj.org); [ronnieben@navajo-nsn.gov](mailto:ronnieben@navajo-nsn.gov); [nnepawq@frontiernet.net](mailto:nnepawq@frontiernet.net); [ybarney@navajopublicwater.org](mailto:ybarney@navajopublicwater.org); Johnson, AudreyL; Li, Corine; Montgomery, Michael; Cristiano, Gina

**Subject:** Gold King Mine Realease - Region 9 Update 3

Please be advised that Region 9 will send daily written updates to this notification list on EPA activities, highlighting new information each day. Also, Region 9 will host a daily Navajo Nation coordination call at 4pm Navajo Time (3PM PDT) - *Next Call Monday 8/10* - Please join us. The call in number is:

**Nonresponsive Conference Code**

## **Background**

On August 5, 2015, an EPA team working to investigate and address contamination at the Gold King Mine in San Juan County, Colorado, unexpectedly triggered a large release of mine waste water into the upper portions of Cement Creek. Initial estimates are that the release contained approximately one million gallons of water that was held behind unconsolidated debris near an abandoned mine portal. There were several workers at the site at the time of the breach, all were unharmed.

8/9/2015

This morning EPA is releasing a detailed data table of the sampling in Cement Creek and the upper portions of the Animas River from August 5, the date of the incident, and August 6.

EPA expects to have new data from August 7 which is currently undergoing review and will be available to the public later today. We acknowledge frustration with the turnaround time for this information. Workers at the lab and data experts are working continuously to develop the information.

The data table (attached) contains a list of analyzed constituents, largely metals, and their numeric value in micrograms per liter, which is equal to parts per billion, or ppb.



The data table released today will include updates to the information released by EPA on August 7. The incident, which occurred on August 5, caused an increase in concentrations of total and dissolved metals as the contaminated mine water moved downstream. These concentrations began to trend toward pre-event conditions by August 6. August 7 and 8 data, when it is available, will inform whether the trend towards pre-event conditions continues.

Note: Total metals analysis for water samples includes the metals content both dissolved in the water and present in the particulates in the water. Typically a dissolved metals analysis of a water sample is performed by removing the particulates with a filter, then analyzing the filtered water for metals. Site information, maps and sampling data are all available at:

[http://www.epaossc.org/site/site\\_profile.aspx?site\\_id=11082](http://www.epaossc.org/site/site_profile.aspx?site_id=11082). Please request a password to view the geospatial viewer for an interactive map accessed through the webpage. Standard (Claim) Form 95 was added to our website (attached).

### **EPA Region 9 Activities**

Yesterday the President of the Navajo Nation declared a State of Emergency for the San Juan River valley. Today, the President and his staff toured the Gold King Mine Site. Rusty Harris-Bishop escorted the President the tour. The President and his staff then attended the community meeting in Durango.

The discharge has moved quickly and was observed near Kirtland, NM. Navajo officials have reacted quickly, assessing their well fields and drinking and irrigation water intake systems and issuing a precautionary "do not use" public service announcement regarding water from potentially impacted sources. Region 9 held a conference call today with Navajo Nation EPA (NNEPA) and Navajo Department of Public Safety.

Region 9 has deployed an On Scene Coordinator (OSC) to the Durango Incident Command Post to coordinate Navajo field activity updates and results with Region 8 and ensure command messages get back to Navajo officials. The Region has also deployed a Public Information Officer (PIO) to participate in a Joint Information Center (JIC), presently in Durango, with and other the affected Federal, State, County and Tribal agencies.

The Navajo EPA surface water monitoring program (Shiprock Office) collected water and sediment samples from the San Juan River - prior to the spill impact. Region 9 has provided 6 START contractors to coordinate and conduct increased sample collection and lab analysis in conjunction with NNEPA. This joint

EPA/NNEPA river sampling program has commenced focusing on the San Juan between Shiprock/Hogback, NM area and Mexican Hat, UT and will continue for the foreseeable future (a static map of the sampling locations "Overview" is attached).

A Region 9 OSC will report to Farmington on Monday to assist. NNEPA also requested drinking water sampling support immediately for Navajo operated water intakes. NNEPA and USEPA drinking water experts agreed to inventory and assess water sources including private wells and intakes.

Region 9 will be providing assistance to Navajo NTUA (utilities) to deliver water to the areas impacted by the Gold King Mine Spill - starting with the Montezuma Creek area. NTUA is sourcing the water from their Sweetwater wells and filling up the service tanks in the affected areas. The ERRS contractor will be providing assistance in the transportation of these waters.

Two Community Involvement Coordinators (CICs) arrived in Farmington on Sunday. The CICs will partner with NNEPA and NN Department of Public Safety to ensure comprehensive outreach to all affected Navajo Chapters. The CICs have begun working with local Navajo Chapter officials and will participate in public meetings at Aneth and Oljato on 8/10.

OSC Robert Wise (Durango):562-889-2572

PIO Rusty Harris-Bishop (Durango):415-694-8840

OSC Randy Nattis (SF to Farmington 8/10): 415-940-1108

Harry Allen, Section Chief (Sit Report):415-218-7406

---

**From:** Allen, HarryL  
**Sent:** Saturday, August 8, 2015 9:50 PM  
**To:** R9\_ER List  
**Cc:** [ebbranch@nndoj.org](mailto:ebbranch@nndoj.org); [bidtahnbecker@navajo-nsn.gov](mailto:bidtahnbecker@navajo-nsn.gov); [russellbegaye@gmail.com](mailto:russellbegaye@gmail.com); [jonmnez@yahoo.com](mailto:jonmnez@yahoo.com); [donbenn@navajo-nsn.gov](mailto:donbenn@navajo-nsn.gov); [tflora@nndoj.org](mailto:tflora@nndoj.org); [Personal Email/Ex. 6@gmail.com](mailto:Personal Email/Ex. 6@gmail.com); [rjoe.opvp@gmail.com](mailto:rjoe.opvp@gmail.com); [rbegay@nndoj.org](mailto:rbegay@nndoj.org); [dtaylor@nndoj.org](mailto:dtaylor@nndoj.org); [cbradley@nndoj.org](mailto:cbradley@nndoj.org); [smpollack@nndoj.org](mailto:smpollack@nndoj.org); [ronnieben@navajo-nsn.gov](mailto:ronnieben@navajo-nsn.gov); [nnepawq@frontiernet.net](mailto:nnepawq@frontiernet.net); [ybarney@navajopublicwater.org](mailto:ybarney@navajopublicwater.org); [Ramona.nez@nndoh.org](mailto:Ramona.nez@nndoh.org); Johnson, AudreyL; Li, Corine; Montgomery, Michael; Cristiano, Gina; Ostrander, David; [acrotty@navajo-nsn.org](mailto:acrotty@navajo-nsn.org); [idelmar@navajo-nsn.org](mailto:idelmar@navajo-nsn.org); Yogi, David; Hubbard, Secody; Lee, Bessie; Farris, Laura  
**Subject:** Gold King Mine Realease - Region 9 Update 2

Please be advised that Region 9 will send daily written updates to this notification

list on EPA activities, highlighting new information each day. Also, Region 9 will host a daily Navajo Nation coordination call at 4pm Navajo Time (3PM PDT) - *Next Call Monday 8/10* - Please join us. The call in number is:

### **Nonresponsive Conference Code**

### **Background**

On August 5, 2015, EPA was conducting an investigation of the Gold King Mine, north of Silverton, CO. The intent of the investigation was to assess the on-going water releases from the mine, to treat mine water, and to assess the feasibility of future mine remediation. The plan was to excavate the loose material that had collapsed into the cave entry back to the timbering. During the excavation, the loose material gave way, opening the adit (mine tunnel) and spilling the water stored behind the collapsed material into Cement Creek, a tributary of the Animas River. Initial estimates are that the release consisted of approximately one million gallons of water (estimated from the dimensions of the mine adit) that was held behind unconsolidated debris near an abandoned mine portal. There were several workers at the site at the time of the breach, all were unharmed.

The first two days after the incident, the plume was moving at approximately 4 miles per hour. According to the EPA's flyover, as of the morning of Aug 8th, the plume had reached the confluence of the San Juan River. As of 4:00 pm this afternoon, the plume had roughly reached Kirtland, New Mexico. The plume has been visually diluted and the leading edge of it is far less defined. The water is reported to be muddy with an orange tinge rather than solid orange.

Sampling data from Cement Creek and the Animas River near Silverton from Aug. 5th and 6th show pH and metals concentrations are decreasing to pre-event conditions. We continue to monitor river conditions at multiple locations to detect trends. Rain events and variations in stream flows can cause the pH and metals concentrations to rise and fall.

The data shows that pH (acidity) levels and dissolved metals in the Cement Creek and the upper portions of the Animas River spiked in the surface water at locations impacted by the contaminant plume. The data shows in the upstream locations the resident time of the plume in any one location was not long lasting. The trend downstream, in the Animas and San Juan Rivers, is expected to be similar or better than upstream, as the contaminant plume passes.

Colorado Parks and Wildlife (CPW) officials have been monitoring the effects of the spill on terrestrial and aquatic wildlife since the incident began. CPW is watching for any impacts on wildlife, whether they are acute or chronic. Fish are especially sensitive to changes in water quality. CPW is also monitoring a control station on a clean tributary.

Colorado Parks and Wildlife has indicated they are optimistic that the effects of the spill on terrestrial wildlife will be minimal.

The water in Cement Creek and the Animas River in Silverton is clearing. The adit is still discharging approximately 500 gallons per minute and the trend is that flow is decreasing. The discharge is being diverted into the newly constructed ponds and treated before it enters Cement Creek. The treatment appears to be effective.

A summary of pH and dissolved metals data is available here:

<http://epaossc.org/goldkingmine>

#### NEXT STEPS

- Continue to treat drainage at mine site.
- Continue to sample the Animas River corridor
- Evaluate and publish data as it is finalized.
- Continue coordination with State, Federal, Tribal and local officials as well as community members, landowners/ water users.
- Continue to provide drinking water and water testing to private well owners.

Site information, maps and sampling data are all available at:

[http://www.epaossc.org/site/site\\_profile.aspx?site\\_id=11082](http://www.epaossc.org/site/site_profile.aspx?site_id=11082). Please request a password to view the geospatial viewer for an interactive map accessed through the webpage.

#### **EPA Region 9 Activities**

The discharge has moved quickly and is in the vicinity of the Navajo Nation boundary, near Kirtland, NM. Navajo officials have reacted quickly, assessing their well fields and drinking and irrigation water intake systems and issuing a precautionary "do not use" public service announcement regarding water from potentially impacted sources. Region 9 held a conference call today with Navajo Nation EPA (NNEPA) and Navajo Department of Public Safety.

The Navajo EPA surface water monitoring program (Shiprock Office) collected water and sediment samples from the San Juan River yesterday - prior to the spill impact. Region 9 provided 2 START contractors and has requested 2 additional personnel to coordinate and conduct increased sample collection and lab analysis

in conjunction with NNEPA. A Region 9 OSC will report to Farmington on Monday to assist. A joint EPA/NNEPA river sampling program has commenced focusing on the San Juan between Shiprock/Hogback, NM area and Mexican Hat, UT and will continue for the foreseeable future. NNEPA also requested drinking water sampling support immediately for Navajo operated water intakes. NNEPA and USEPA drinking water experts agreed to inventory and assess water sources including private wells and intakes.

Two Community Involvement Coordinators (CICs) will deploy to Farmington on Sunday. The CICs will plan to meet with local Navajo Chapter officials and prepare to host public meetings in the coming days. The CICs will partner with NNEPA and NN Department of Public Safety to ensure comprehensive outreach to all affected Navajo Chapters.

Region 9 has deployed an On Scene Coordinator (OSC) to the Durango Incident Command Post to coordinate Navajo field activity updates and results with Region 8 and ensure command messages get back to Navajo officials. The Region has also deployed a Public Information Officer (PIO) to participate in a Joint Information Center (JIC), presently in Durango, with and other the affected Federal, State, County and Tribal agencies.

OSC Robert Wise (Durango): 562-889-2572

PIO Rusty Harris-Bishop (Durango): 415-694-8840

OSC Randy Nattis (SF to Farmington 8/10): 415-940-1108

Harry Allen, Section Chief (Sit Report): 415-218-7406